Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Use of Spectrum Bands Above 24 GHz For Mobile Radio Services	)	GN Docket No. 14-177
Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40.0 GHz Bands	)	IB Docket No. 15-256
Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 to Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services	)	WT Docket No. 10-112
Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz for Government Operations	)	IB Docket No. 97-95

REPLY COMMENTS OF HUGHES NETWORK SYSTEMS, LLC AND ECHOSTAR SATELLITE OPERATING CORPORATION

Hughes Network Systems, LLC ("Hughes") and EchoStar Satellite Operating Corporation ("EchoStar") submits these reply comments in response to the Federal Communications Commission's ("Commission") Second Further Notice of Proposed

Rulemaking ("*Second Notice*"),[1] in support of the comments filed by the Satellite Industry Association ("SIA") encouraging the Commission to act on its proposed use of the 24.75-25.25 GHz band (the "24 GHz band") by Fixed-Satellite Service ("FSS") systems.[2] EchoStar/Hughes agree with SIA that the Commission should adopt its proposal to license FSS earth stations on a co-primary basis under Section 25.136(d) of the FCC's rules in the 24 GHz band. As actual and planned satellite operations approach the limits of available spectrum in the 28 GHz band, given the new siting restrictions,[3] the ability of satellite operators to site individually licensed earth stations in adjacent frequency bands with similar propagation characteristics is a helpful solution for the future growth of satellite-based broadband services.

EchoStar is the largest United States-based commercial geostationary satellite operator, and the fourth largest operator globally. EchoStar owns and operates a fleet of 26 satellites, including those which operate in the broadcast satellite service, the FSS and themobile satellite service ("MSS").

Hughes is the largest provider of satellite broadband services in the United States and globally. With the launch of its Gen5 service in March 2017, Hughes provides customers across the continental United States, southeastern Alaska, Puerto Rico, and the U.S. Virgin Islands broadband internet at and above Commission-defined speeds of 25 Mbps down and 3 Mbps up. Hughes' Gen5 service has been very popular among Hughes' customers, with over 340,000 subscribers in the first six months[4] and an overall downward trend in consumer churn.[5] To continue to meet rising consumer demand for increased capacity and speed, Hughes has applied

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[1] *See Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, et al*., Second Report and Order, Second Further Notice of Proposed Rulemaking, and Memorandum Opinion and Order, FCC 17-152 (rel. Nov. 22, 2017) ("*Second Notice*").
[2] *See* Comments of SIA in GN Dkt. Nos. 14-177 et. al filed January 23, 2018.
[3] *See Second Notice*, supra note 1, at ¶¶ 114-156.
[4] Hughes Q3 Earnings Call
[5] *See* Ex parte of Hughes in WC Dkt. No. 10-90, filed January 18. 2018.

to the Commission for authority to construct and launch EchoStar XXIV/Jupiter 3, an Ultra-High Density Satellite, with speeds upwards of 100 Mbps, that is planned for launch in 2021 and will provide services throughout the United States.[6]

As the United States moves towards an integrated 5G ecosystem that promises the full inclusion of everyone in the United States, regardless of geography, satellite-based broadband services have a significant role to play in delivering on these objectives. The ubiquity, resiliency, and cost-effectiveness of satellite networks makes high-speed satellite broadband service an essential component of the 5G ecosystem, including for reaching consumers in rural, remote, and tribal areas of the country. As satellite technology has continued to improve, the demand for satellite broadband in suburban areas of the country has also increased. In order to meet the rising demand for satellite broadband services, satellite operators must have access to sufficient spectrum to support these customers. Access to the 24 GHz band for use by individually licensed FSS earth stations, as proposed by the Commission, would enable access to important additional spectrum critical to supporting these services.

Accordingly, EchoStar/Hughes supports SIA's comments that the Commission's proposed rule to allow individually licensed earth stations in the 24 GHz band on a co-primary basis with Upper Microwave Flexible Use Service ("UMFUS") strikes the appropriate balance between the needs of FSS operators to gain more access to spectrum for gateways to meet consumer demand and terrestrial systems developing technology for that band, all while promoting the Commission's objective for efficient use of the spectrum resource.[7] .

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[6] S*ee* Hughes Application for HNS 95W space station, IBFS File No. SAT-LOA-20170621-00092 (filed June 21, 2017); *See also* Hughes*, Press Release: Hughes Selects Space Systems Loral to Build Next-Generation Ultra High Density Satellite*, https://www.echostar.com/en/Press/Newsandmedia/Hughes%20Selects%20Space%20Systems%20Loral%20To%20Build%20Next-Generation%20Ultra%20High%20Density%20Satellite.aspx (August 9, 2017).

[7] *See* Comments of SIA, pgs. 6-7. *See, e.g., Second Notice*, note 1 supra.

As mentioned above, Hughes is currently in the process of constructing its newest satellite, EchoStar XXIV/Jupiter 3. Currently, EchoStar XXIV will have 20 individually licensed earth stations in the 28 GHz band, as well as in the Q and V bands. As a result of increasing user demands for greater available capacity, EchoStar/Hughes and other providers must look to additional frequency bands to obtain this necessary capacity. The addition of the spectrum at the 24 GHz band to support these needs for individually licensed earth stations will assist in meeting that demand, without burdening UMFU deployment.

Hughes supports the grandfathering of protections for currently licensed BSS feeder link earth stations in the 24 GHz band, or for those with applications pending as of the effective date of any rule adopted in this proceeding.[8]

However, on a going-forward basis, to ensure the most efficient use of the spectrum resource, EchoStar/Hughes agree with SIA that Footnote NG535, prioritizing BSS feeder links in the 24.75-25.05 GHz band and limiting FSS operations to BSS feeder links in the 25.05-25.25 GHz band should be eliminated to provide more flexibility to FSS operations in those bands.[9] The two degree separation rule provides sufficient protection to BSS feeder links while providing a valuable 500 MHz of additional uplink capacity to the broader FSS use.

As the Commission has observed over the course of this proceeding, the ability to deliver on the promise and potential of broadband starts with ensuring that technologies have access to the spectrum they need to deploy these services. By adopting these proposed rule changes in the 24 GHz the Commission will provide the satellite industry with access to additional spectrum to meet the demands of U.S. customers.

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[8] *See* Comments of SIA, pgs. 7-8.
[9] *See* Comments of SIA, pgs. 8-9.

Respectfully Submitted,

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